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Engagement in course development by employers not traditionally involved in higher education: student and employer perceptions of its impact

Centre for Higher Education Research and Information (CHERI) of the Open University

Report written by Anna Scesa and Ruth Williams with support from Brenda Little, William Locke and Winnie Tang

EPPI-Centre
Social Science Research Unit
Institute of Education
University of London

Report no. 1601R · January 2008

The results of this systematic review are available in four formats:

SUMMARY

Explains the purpose of the review and the main messages from the research evidence

REPORT

Describes the background and the findings of the review(s) but without full technical details of the methods used

**TECHNICAL
REPORT**

Includes the background, main findings, and full technical details of the review

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The EPPI-Centre reference number for this report is 1601R.

This report should be cited as:

Scesa A, Williams R (2007) Engagement in course development by employers not traditionally involved in higher education: student and employer perceptions of its impact. Report. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

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List of abbreviations

BEI	British Education Index
CHERI	Centre for Higher Education Research and Information
DfES	Department for Education and Skills
DIUS	Department for Innovation, Universities and Skills
EPPI-Centre	Evidence for Policy and Practice Information and Co-ordinating centre
ERIC	Education Resources Information Center
FD	Foundation degree
FE	Further Education
HE	Higher Education
HEFCE	Higher Education Funding Council for England
HNC	Higher National Certificate
HND	Higher National Diploma
NVQ	National Vocational Qualification
PSRB	Professional, statutory and regulatory body
QAA	Quality Assurance Agency
SME	Small and medium enterprise
SWE	Supervised work experience
WBL	Work based learning
WoE	Weight of evidence



Preface

Scope of this report

This report describes the findings and methods of a systematic review of research about employer engagement in course development and its impact on employers and students. This review was commissioned by the former Department for Education and Skills (DfES) and supported by staff of the EPPI-Centre. (On 28th June 2007 the DfES was replaced by the Department for Children, Families and Schools (DCSF), and the Department for Innovation, Universities and Skills (DIUS).)

The review examines engagement in course development by employers that have not traditionally been involved in higher education; thus, it excludes studies that are concerned with the main professional occupations. It synthesises the findings of a small subset of the studies that were found to assess the impact of employer engagement in course development from the perspectives of employers and students.

The policy and practice implications of the findings of the review are discussed and recommendations for future research are made. One of the main conclusions is that there is need for more evaluative and analytical research to shed further light on this topic. The key messages of this review may be of particular interest to:

- policy-makers, by highlighting where current

policy relevant to employer engagement in course development is supported by research evidence and where there are gaps;

- researchers (and commissioners of research), by highlighting areas where the evidence base is thin;
- practitioners, employers and students interested in the engagement of employers in non traditional industries/sectors.



Abstract

The review question

Our review question was:

What impact does employer engagement in course development have on employers and students (from the student/employer perspectives)?

Who wants to know and why?

The Department for Children, Schools and Families set the topic for this review to improve understanding of employer engagement in higher education (HE) curriculum development and, in particular, the impact (if any), of that engagement. The underlying rationale was that a number of studies have set out to capture employers' views of graduate skills and qualities, and some have indicated that employers are often not satisfied with graduates' 'softer' skills. Furthermore, policy pushes have created an environment where employer engagement is the expected norm for both higher and further education.

Methods of the review

We looked for research on engagement in course development by employers that have not traditionally been involved in higher education. We did this through keyword searches of bibliographic databases, and searches of

websites and key journals. We then applied inclusion and exclusion criteria to build up a map of relevant studies. Additional criteria were applied to the studies in the map, which produced the eight studies that were used to address the research question above.

Results:

- **Benefits of work-based learning to students** include gaining new and improving existing skills such as personal (e.g. increased confidence), problem-solving and communicative skills; adapting existing knowledge and skills to the needs of new situations in the workplace; managing their own learning; and applying theory in practice.
- **Benefits of work-based learning to employers** were their recognition that students'/employees' skills had improved.
- **Management of work-based learning:** issues here concerned the actors involved - students, employers, institutions/academics. For students, difficulties arose in organising placements. For employers and institutions, for example, the need to create opportunities to meet and adequately brief all involved about the aims and responsibilities of placements was emphasised.
- **Realism of work-based learning (WBL) activities** was highlighted as helping the

achievement of WBL outcomes - for example, through 'live' projects.

- **Academic staff development** can arise from tutors' close working relationship with employer organisations, resulting in valuable insights into the workings of organisations and thus enhancing students' learning experiences and outcomes.
- **Barriers to engaging employers** included lack of interest, lack of understanding, and lack of ability through time and work pressures on the part of employers, and the unnecessary use by institutions/academics of academic language and terminology.
- **Size of employer organisation:** co-operation between educational providers and SMEs can be time-consuming; there is some evidence to suggest that engaging employers through employer networks is more beneficial.

Implications

The review found that there are benefits to employer engagement (e.g. work-based learning) but there are also barriers, and one of these barriers is size of employer organisation: smaller organisations are less likely to engage with higher education. However, the review also found that there is a need for more rigorous evaluative, analytical and longitudinal studies to shed further light on the impact of employer engagement in course development - and in the disciplinary areas and occupational sectors that were the focus of this review.

Where to find further information

<http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2316>



CHAPTER ONE

Background

Aims of the review

The review has been undertaken to improve our understanding of employers' engagement in higher education (HE) curriculum development, and in particular the impact, if any, of that engagement. The review was extended to cover aspects of employer engagement in further education (FE) to see what lessons might be learned from that experience.

The review examines engagement in course development by employers that have not traditionally been involved in HE; thus, it excludes studies that are concerned with the main professional occupations. The types of involvement we were interested in covered work-based learning (WBL) and continuing professional and workforce development, as well as employers working directly with course teams. The review focused on students studying full or part-time towards an undergraduate qualification (or level 3 and above in the further education sector), and employees undertaking continuing professional and workforce development. Studies included were those published in or after 1987 which were reports on the UK further and higher education sectors.

Review question

The review topic was:

The role of employer engagement in course development and the difference employer engagement makes (to employers and to students)

From this an initial review question was identified to produce the systematic map:

What is the impact of employer engagement in course development?

From the systematic map, a subset of the literature was selected for the in-depth review, which addressed the following question:

What impact does employer engagement in course development have on employers and students (from the student/employer perspectives)?

Policy and research background

The involvement of employers in both HE and FE has a long tradition. In simple terms, this involvement might be summed up as two distinctive types: (i) 'initial' HE (and FE) and work-based learning where students go into the workplace as part of their studies to develop and enhance their learning and skills, and (ii) continuing professional and workforce development, where learning tends to be more demand-led and geared towards the specific skills needs of employers and their employees. With the latter, employers will have a direct interest in their employees as opposed to the indirect interest in students they have in

the former category who may or may not be ultimately employed by the employer.

Over the years, successive Government policies have been directed towards making HE more responsive to employer demands. While employer demand is taken into account by the HE sector, the ways it is done, the extent to which it is done, and the underlying purposes all vary. These variations will often reflect custom and practice in the particular occupational area, and might also reflect the extent to which particular HE institutions feel the need to respond to government calls for more responsiveness to the needs of employers and the economy.

Policy pronouncements and reviews since 2000, particularly in the FE sector, have been driving changes to make qualifications and skills more economically valuable to meet the needs of employers and the economy. Initiatives include the establishment of Centres of Vocational Excellence, the Government's skills strategy, the reform of 14-19 education and training, the reform the FE sector, and the growth of foundation degrees that is mainly taking place in FE, including a proposal for granting FE colleges foundation degree-awarding powers. Furthermore, the Leitch Review of Skills (2006) reported on what steps need to be taken to address the poor standing of the UK's skills base at every level (including HE) compared with its main international comparators.

There have also been policy pushes in the HE sector for demand-led supply of skills training to create an environment where employer engagement is expected to be the norm. One of these is lifelong learning networks that have been established to improve progression opportunities for vocational learners into and through higher education. These networks comprise FE colleges and HE institutions and part of their remit is to develop curricula and involve employers. Other developments have emerged in response to the Leitch Review and include the strategy of the Higher Education Funding Council for England (HEFCE) to support links between HE and employers on skills and lifelong learning, which is under development

(HEFCE 2006). Another is the 2007 annual grant letter from the Secretary of State for Education and Skills to HEFCE, which draws attention to the Leitch Review and calls for new approaches 'that make available relevant, flexible and responsive provision that meets the high skill needs of employers and their staff' (DfES 2007).

These developments assume that the engagement of employers with HE, FE and other providers of education and training is good for the economy and benefits everyone that is part of the relationship. Gleeson and Keep (2004) contest this notion. They state that the power relationship between employers and education is an unequal one. Since the 1970s, successive governments have emphasised the need for education to provide what the labour market supposedly needs and employers have been given greater say in educational policy making at the expense of education.

Nevertheless, the expansion of the FE and HE sectors has been accompanied by an increased emphasis on work-related learning and on the employability of graduates. However, impacts of employer engagement in teaching and learning may be mixed, i.e. both positive and negative, and may be positive for some employers, students and graduates and not for others, and these may be relatively short-lived. Many of the studies about employer engagement are descriptive in nature and say little about impact, for example, on the quality of students' learning experiences and outcomes and whether or not these are enhanced by employer engagement. Any empirical findings will need careful interpretation, especially when considering whether there is any causal relationship between employer engagement in course development and students' learning experiences and outcomes - for example, graduates' success in the labour market.

The review group and users of the review

This systematic review was undertaken by the Centre for Higher Education Research and Information (CHERI) of the Open University. The

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review's direction came from the Department for Children Schools and Families (DCSF) (formerly DfES) in the form of an invitation to tender for the work. Staff of the EPPI-Centre liaised with the CHERI group and worked on the review. Officers of the DCSF advised the group. Funding came from the DCSF grant to the EPPI-Centre. A 'virtual' advisory group commented on the protocol and the draft report.

The findings of the review are important for national policy developments in this area. In particular, they will be of interest to policy-makers by highlighting where current policy relevant to employer engagement in course development is supported by research evidence and where there are gaps. They will also be of interest to researchers (and commissioners of research) by highlighting areas where the evidence base is thin, and to practitioners, employers and students interested in the engagement of employers in non-traditional industries/sectors.

CHAPTER TWO

Methods of the review

This was a ‘limited search scoping review (map and synthesis)’, i.e. ‘a quick overview of research undertaken on a (constrained) topic and an overview of the evidence provided by these studies in answering the review question’ (Social Science Research Unit 2006, p 6). The following constraints were applied:

- The focus of the question was delimited to ‘*What is the impact of employer engagement in course development?*’
- Only two bibliographic databases were searched and key terms, rather than extensive searches of all variants, were used.
- A simple descriptive map was produced.
- Data extraction was limited to key data and results for simple quality assessment.
- Quality assessment and synthesis were kept simple.

A ‘virtual’ advisory group was formed and was consulted at the beginning of the review and on the draft final report.

Reports were identified via the following methods: (i) bibliographic databases - the British Education Index (BEI) and the Educational Resources Information Center (ERIC) databases - were searched using an agreed list of keywords; (ii) ten key journals were identified and issues scanned for relevant

literature; (iii) websites of key policy bodies were extensively searched; (iv) a list of key authors in the area was also drawn up by the review group and searches were conducted on BEI and ERIC; (v) papers were also identified by the review group members and colleagues in the course of other research activities. Searches of the above mentioned sources were limited to studies published from 1987 to January 2007 (inclusive).

A study was deemed relevant if it met all the inclusion criteria listed below:

1. Must focus on employers not traditionally engaged in course development before
2. Must cover HE (undergraduate qualifications) and/or FE (level 3 qualifications and above) - at least for the map of evidence
3. Must cover engagement in course development of individual employers and/or wider bodies (such as sector skills councils)
4. Must cover research on the UK
5. Must be empirical research
6. Must cover research placed in the public domain between 1987 and present

Inclusion criteria (and their related exclusion criteria) were applied successively to (i) titles and abstracts and (ii) full reports. Full

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reports were obtained for those studies that appeared to meet all the criteria or where there was insufficient information to make a judgement. The inclusion and exclusion criteria were re-applied to the full reports and those that did not meet these initial criteria were subsequently excluded.

A total of 3,974 citations were identified through searching the BEI and ERIC databases. Once duplicate entries were eliminated, 3,944 titles and/or abstracts remained. These were screened using the inclusion criteria described above. The initial screening of titles and abstracts yielded 142 papers potentially relevant to our review. Another 75 papers were identified via handsearching of relevant journals and websites and through personal networks. After excluding duplicates, 210 papers went through to the full-text screening stage. Full texts of identified citations were obtained via the Open University photocopy requests and inter-library loan services or, when this did not yield results, the Institute of Education library. This retrieval strategy was very successful and by early January 2007 we had obtained the full texts of all of the 210 potentially relevant papers.

Inclusion criteria were then re-applied and 182 were discarded. In the end, 28 publications were included in the map. These studies were data extracted using the *EPPI-Centre Data Extraction and Coding Tool for Education Studies V2.0* (EPPI-Centre 2006).

In order to move from broad characterisation (systematic map) to in-depth review it was decided, with DCSF agreement, to focus on (i) evaluative research and (ii) the impact of employer engagement on students and

employers from the perspectives of students and employers. Thus, the following additional exclusion/inclusion criteria were applied to the 28 studies in the map:

Criterion 1: Is the publication evaluative (i.e. 'what works')?

Yes = included

No = excluded

Criterion 2: Does the publication present findings on the impact of employer engagement on students and employers (from the student/ employer perspectives)?

Yes (i.e. students and/or employers) /
Yes, partially (findings were at a general/macro level where the specific object and nature of the intervention were not clear) = included
No = excluded

The application of criterion 1 resulted in 14 studies being excluded from the in-depth analysis as they were not of the 'what works' type. Of the 14 studies left, a further six were excluded because they did not present findings on the impact of employer engagement on students and employers, or present findings from the perspective of employers and/or students. At the end of this stage of further selection, only eight publications were considered suitable for in-depth analysis.

More details of the methods are given in the Technical Report (Chapter 2 and the appendices).



CHAPTER THREE

What research was found?

The 28 publications included in the map covered a range of topics (e.g. university-industry collaboration, work placements, work-based learning, graduate apprenticeships, live projects, foundation degrees, collaborative partnerships) and a range of purposes (e.g. ‘descriptions’, ‘what works’, ‘exploration of relationships’, ‘methods development’, ‘reviewing/synthesising research’). Half of the studies (14) were of an evaluative nature - i.e. they aim to measure the effectiveness or the impact of a specific intervention or programme on a defined sample of recipients of the programme or intervention. A sizeable subset consisted of (i) publications of a descriptive nature (8), i.e. studies which aim to produce a description of a state of affairs or a particular phenomenon and to document its characteristics, and (ii) publications reviewing or synthesising existing research (6).

With regard to the type of employer engagement at the centre of the studies, the emphasis on course development deliberately excluded from the review other types of engagement such as membership of advisory boards or technology transfer activities. The review group, however, adopted a broad definition of course development including design, development, assessment and quality assurance and review. All these activities are covered in the map. A breakdown of the educational settings of the studies shows that the majority of engagements take place in higher education institutions (26), followed, in

almost equal shares, by the workplace (16) and post-compulsory education institutions (mainly further education colleges) (14). The type of impact (based on the perceptions of those participants involved in the studies - students, employers, academics) that employer engagement activities have is fairly evenly spread between impact on students (20) and employers (17), although a significant minority of studies look at the impact on the institution as a whole (11) and academics in particular (7). Finally, with regard to qualifications, the predominance of studies on foundation degrees (12) is a consequence of (i) the intrinsic nature of this qualification, a core feature being the involvement of employers in the development and delivery of the courses, and (ii) the DCSF’s brief for this systematic review which asked the review group to look in particular at foundation degrees. Ten studies also focused on first degrees and seven on other higher education qualifications at sub-degree level.

More details of the systematic map can be found in the Technical Report (Chapter 3 and the appendices).



CHAPTER FOUR

What were the findings of the studies?

Eight studies were selected from the systematic map for the in-depth review by additional inclusion criteria. The criteria for selecting these studies were that they had to be evaluative (i.e. 'what works?'), and present findings on the impact of employer engagement on employers and students from the employer/student perspectives.

Five of the studies were institution-specific (i.e. took place in one institution). Of these, one focused on a foundation degree and explored students'/employees' and employers' experiences (Hillier and Rawnsley 2006). It found that the majority of employers were positive about their experiences and reported how their employees' skills had improved, their confidence had grown, they were better able to manage and communicate, and they had become more knowledgeable. These views were reinforced by the employees' experiences.

The other four studies were of undergraduate programmes designed and delivered by a higher education institution with some form of work-based learning. For example, one (Greenbank 2002) looked at the use of micro-businesses for undergraduate placements on business and management courses and the experiences of placing first year students in these businesses. The students' and employers' experiences were varied and the author concludes that the study has helped to underline the importance of the academic tutor's mediating role. 'Live' projects, which

provide students with the opportunity to work with real life business situations, were the focus of another study (Thomas and Busby 2003). Through explorations of students', tutors' and industry partners' views of these projects, the authors conclude that they are a valuable experience for all involved - industry gains new ideas and solutions to problems, students develop new and enhance existing skills, and tutors update their industrial knowledge and build partnerships. Similar benefits were found in an evaluation of a graduate apprenticeship programme (Thomas and Grimes 2003) - students felt it offered a significant and worthwhile learning experience, while employers recognised the greater work relevance of such a programme by enhancing apprentices' personal and professional development and providing long-term benefits of continuing professional development.

An exception to those mentioned above was a study (Kinman and Kinman 2000) of an undergraduate programme delivered by a university 'in house' to a group of senior managers of a company. A number of difficulties are reported: academics had to grapple with company culture, while the participants had problems understanding the academic language used in the delivery of the curriculum. The authors also note the absence of a student culture which reinforced the participants' insularity and narrow vision. The authors conclude that the benefits of in-company education may not be felt unless attention is

paid to the linking of education and workplace activity in the context of the influence of a powerful corporate culture.

The remaining three studies were sector-wide, two being programme specific - foundation degrees (QAA 2005c, York Consulting 2004) - and the other programme and occupational area-specific - undergraduate tourism programmes (Leslie and Richardson 1999). The sector-wide studies of foundation degrees concluded that the majority of providers have effective working relationships with employers and that employers, while willing to contribute to the programme design stage, may find continued involvement more difficult. In particular there are challenges for educational providers working with SMEs (QAA). Similar conclusions are reported by York Consulting (2004): the vast majority of foundation degrees had effective employer engagement, although the level and manner varied. The authors also note a number of barriers to the engagement of employers: lack of interest, lack of understanding and difficulties in engaging SMEs.

In contrast, Leslie and Richardson's 1999 study was a sector-wide study of the expectations and experiences of students studying tourism management degree programmes that included a period of supervised work experience. The study found that there were discrepancies between the perceptions of students prior to their placements and their actual experiences. It concluded that students' anticipated benefits of supervised work experience are not often realised and the problem lies in how it is managed.

A number of cross-cutting themes relating to student/employer perceptions of impact came out of the synthesis of this set of studies:

- **Benefits of work-based learning to students** include gaining new and improving existing skills such as personal (e.g. increased confidence), problem-solving and communicative skills; adapting existing knowledge and skills to the needs of new situations in the workplace; managing their own learning; and applying theory in practice.
- **Benefits of work-based learning to employers** were their recognition that students'/employees' skills had improved.
- **Management of work-based learning:** issues here concerned the actors involved - students, employers, institutions/academics. For students, difficulties arose in organising placements. For employers and institutions, for example, the need to create opportunities to meet and adequately brief all involved about the aims and responsibilities of placements was emphasised.
- **Realism of work-based learning activities** was highlighted as helping the achievement of work-based learning outcomes, for example, through 'live' projects.
- **Academic staff development** can arise from tutors' close working relationship with employer organisations resulting in valuable insights into the workings of organisations and thus enhancing students' learning experiences and outcomes.
- **Barriers to engaging employers** included lack of interest, lack of understanding, and lack of ability through time and work pressures on the part of employers, and the unnecessary use by institutions/academics of academic language and terminology.
- **Size of employer organisation:** co-operation between educational providers and SMEs can be time-consuming; there is some evidence to suggest that engaging employers through employer networks is more beneficial.
- **Benefits of work-based learning to students** include gaining new and improving existing skills such as personal (e.g.



CHAPTER FIVE

What does this mean?

Strengths and limitations of this systematic review

The main strengths of this review are that it has been rigorous and transparent. Throughout all stages of the review, quality assessment processes were applied internally within and externally to the review group, and advice and support was provided by staff of the EPPI-Centre. There are also limitations but, within the parameters that we set ourselves, we feel it is likely that all of the studies of relevance to this review question have been found and that the review provides a degree of clarity about the research evidence and its implications for policy, practice and further research.

However, we are not able say confidently from the in-depth review that students and employers have benefited (or not) as a result of employer engagement (in the context of academic staff, students' and employers' perceptions) - i.e. we are not able to establish a causal impact or relationship. Employer engagement may well be an important factor (along with others) in course development, but we are unable to say with conviction that this is the case, especially given that none of studies involved control groups. What we can say, because of the strengths outlined above, is that there are benefits (and hindrances) as perceived by some academic staff, some students and some employers involved in some courses.

The main limitations were timescale and resources and for this reason it was agreed that a 'limited search scoping review (map and synthesis)' would be undertaken. Because of the limited nature of the search strategy, relevant studies might have been missed. It also proved difficult to find studies that (i) explored the input and role of employers in course development (i.e. whether it was through design and development or through the provision of work-based learning opportunities and the like), and (ii) focused on impact on students and/or employers (i.e. that were evaluative and discussed 'what works' as opposed to being descriptive and offering little analytical and evaluative content). We were disappointed that we did not find more large-scale studies and studies that tracked students/ graduates in(to) the labour market to assess impact - on students/graduates themselves and on employers. However, we are aware that any attempt to isolate this or any 'single' aspect of a student's learning experience and measure impact is inherently difficult.

Having excluded employers and professions that have been traditionally engaged in course development, it seems likely that studies will have been omitted that could have shed further light on the impact on students and employers of employer engagement in course development. Of course, it should also be noted that if we had included studies of these employers/professions, this would have been a very different systematic review.

There are also a number of factors that we also believe might limit the usefulness of the in-depth review:

- i. The 'limited' nature of the review means that some relevant studies might have been missed.
- ii. Having a better idea of the range of material we came across, further studies for the in-depth review might be found if the search was to be re-run.
- iii. Having extended the review to the FE sector, few studies were found and none appears in the in-depth review (except for a programme collaboratively delivered by a university and a FE college - Hillier and Rawnsley 2006).
- iv. Only one study (Kinman and Kinman 2000) deals with workforce development as opposed to 'initial' HE and work-based learning.
- v. The focus on impact from the student/ employer perspectives excluded a number of studies focusing on impact from the providing institution's perspective (e.g. Foscett 2005, McCoshan et al. 2005).
- vi. There was a lack of empirical studies focusing on impact that were of apparent good methodological quality.

Implications for policy and practice

The in-depth review has shown that while there are benefits - e.g. of work-based learning (WBL) - to both employers and students, there are barriers to engaging employers in course development. One of these is size of employer organisation: smaller organisations, especially micro-businesses, are less likely to engage with higher education because they lack the capacity and resource to research the differences in provision and quality of higher education institutions for WBL purposes (Connor 2005). Another study (Brennan and Little 2006) suggests that policy bodies should put in place strategies for workplace learning and employer engagement that look to more innovative forms of workplace learning to reach 'hard to engage' employers (i.e. SMEs). Institutions should also make internal changes to engage smaller employers and raise awareness among small

employers about how institutions can support their workforce training/development needs (Connor 2005). Many of these suggestions are now being supported by policy bodies who are promoting initiatives to encourage demand-led employer engagement.

Our in-depth review has shown that the management of WBL appears to be an issue. However, we know of conceptual studies (excluded from our review) that have reported on best practice in managing and supporting work-based learning. Why then does this aspect continue to be an area of concern? It may be that given the lack of good quality research, as evidenced by our review, there is not the research-based practice and thus when 'best practice' is promoted, it is not trusted. It may also be that where best practice is underpinned by research-based practice, it is not being shared or, more precisely, is not being shared outside the confines of the disciplinary culture and occupational area concerned (i.e. there might be a perpetuation of the notion that something learnt in one disciplinary area is not applicable to another because of the nature of the discipline). As we note above, there may be lessons to be learned from those employers and professions that have been traditionally engaged in course development, and which could be shared across disciplinary cultures and occupational areas.

A general conclusion from this systematic review is that there appears to be a need for more rigorous evaluative, analytical and longitudinal studies that will shed further light on the impact of employer engagement in course development - and in the disciplinary areas and occupational sectors that were the focus of this review. A number of studies that have reported since this review was conducted or are about to report may contribute to this research topic, and will be of interest to those conducting future systematic reviews in this area and to policy-makers wishing to develop a programme of research.



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Studies included in map and synthesis

*Denotes a publication included in the in-depth review

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Appendix 1.1: Authorship of this report

This work is a report of a systematic review conducted working with support staff.

The authors of this report are:

Anne Scesa (Centre for Higher Education Research and Information (CHERI) of the Open University)

Ruth Williams (Centre for Higher Education Research and Information (CHERI) of the Open University)

With support from Brenda Little, William Locke and Winnie Tang of the Centre for Higher Education Research and Information (CHERI) of the Open University.

For further information about this review, please contact:

Ruth Williams
Senior Policy Analyst
Centre for Higher Education Research and Information (CHERI) of the Open University

tel: 020 7447 2552
email: r.k.williams@open.ac.uk

For further information about the work of the EPPI-Centre, please contact:

EPPI-Centre
Social Science Research Unit
Institute of Education, University of London
18 Woburn Square

Tel: +44 (0)20 7612 6397
Fax: +44 (0)20 7612 6800
E-mail: EPPIAdmin@ioe.ac.uk

Review group

Brenda Little (Centre for Higher Education Research and Information (CHERI), The Open University)
William Locke (Centre for Higher Education Research and Information (CHERI), The Open University)

Anne SCESA (Centre for Higher Education Research and Information (CHERI), The Open University)
Winnie Tang (Centre for Higher Education Research and Information (CHERI), The Open University)
Ruth Williams (Centre for Higher Education Research and Information (CHERI), The Open University)

Advisory group membership

For this review:

Conflict of interest

There were no conflicts of interest for any member of the review group.

Acknowledgements

The work described in this report was undertaken by the Centre for Higher Education Research and Information (CHERI) of the Open University, which received funding from the former Department for Education and Skills (DfES). The views expressed in the report are those of the authors and not necessarily those of the Department for Children Schools and Families (DCSF), or the Department for Innovation, Universities and Skills (DIUS), which have replaced the DfES.

The review group is grateful to the members of the EPPI-Centre, which is part of the Social Science Research Unit at the Institute of Education, University of London, and particularly to Kelly Dickson and Mark Newman, for their advice and support during the course of the review. We are also grateful to members of the advisory group for their helpful suggestions.

The review group acknowledges the financial support of the former DfES and the professional support provided by its officers throughout the review process.



Appendix 2: The standard EPPI-Centre systematic review process

What is a systematic review?

A systematic review is a piece of research following standard methods and stages (see figure 1). A review seeks to bring together and ‘pool’ the findings of primary research to answer a particular review question, taking steps to reduce hidden bias and ‘error’ at all stages of the review. The review process is designed to ensure that the product is accountable, replicable, updateable and sustainable. The systematic review approach can be used to answer any kind of review question. Clarity is needed about the question, why it is being asked and by whom, and how it will be answered. The review is carried out by a review team/group. EPPI-Centre staff provide training, support and quality assurance to the review team.

Stages and procedures in a standard EPPI-Centre Review

- Formulate review question and develop protocol
- Define studies to be included with inclusion criteria
- Search for studies - a systematic search strategy including multiple sources is used
- Screen studies for inclusion
 - o Inclusion criteria should be specified in the review protocol
 - o All identified studies should be screened against the inclusion criteria
 - o The results of screening (number of studies excluded under each criterion) should be reported
- Describe studies (keywording and/or in-depth data extraction)
 - o Bibliographic and review management data on individual studies
 - o Descriptive information on each study
 - o The results or findings of each study

- o Information necessary to assess the quality of the individual studies

At this stage the review question may be further focused and additional inclusion criteria applied to select studies for an ‘in-depth’ review.

- Assess study quality (and relevance)
 - o A judgement is made by the review team about the quality and relevance of studies included in the review
 - o The criteria used to make such judgements should be transparent and systematically applied
- Synthesise findings
 - o The results of individual studies are brought together to answer the review question(s)
 - o A variety of approaches can be used to synthesise the results. The approach used should be appropriate to the review question and studies in the review
 - o The review team interpret the findings and draw conclusions implications from them

Quality assurance (QA) can check the execution of the methods of the review, just as in primary research, such as:

- Internal QA: individual reviewer competence; moderation; double coding
- External QA: audit/editorial process; moderation; double coding
- Peer referee of: protocol; draft report; published report feedback
- Editorial function for report: by review specialist; peer review; non-peer review

The results of this systematic review are available in four formats:

SUMMARY

Explains the purpose of the review and the main messages from the research evidence

REPORT

Describes the background and the findings of the review(s) but without full technical details of the methods used

**TECHNICAL
REPORT**

Includes the background, main findings, and full technical details of the review

DATABASES

Access to codings describing each research study included in the review

These can be downloaded or accessed at <http://eppi.ioe.ac.uk/reel/>

First produced in 2008 by:

Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre)
Social Science Research Unit
Institute of Education, University of London
18 Woburn Square
London WC1H 0NR

Tel: +44 (0)20 7612 6367

<http://eppi.ioe.ac.uk/>

<http://www.ioe.ac.uk/ssru/>

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The EPPI-Centre was established in 1993 to address the need for a systematic approach to the organisation and review of evidence-based work on social interventions. The work and publications of the Centre engage health and education policy makers, practitioners and service users in discussions about how researchers can make their work more relevant and how to use research findings.

Founded in 1990, the Social Science Research Unit (SSRU) is based at the Institute of Education, University of London. Our mission is to engage in and otherwise promote rigorous, ethical and participative social research as well as to support evidence-informed public policy and practice across a range of domains including education, health and welfare, guided by a concern for human rights, social justice and the development of human potential.

The views expressed in this work are those of the authors and do not necessarily reflect the views of the funder. All errors and omissions remain those of the authors.

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telephone: +44 (0)20 7947 9556 email: info@ioe.ac.uk